

ON BIRDS COLLECTED IN YUCATAN AND SOUTHERN MEXICO.

BY WITMER STONE.

The collections here described were made by Mr. F. C. Baker and myself on the recent expedition from the Academy of Natural Sciences of Philadelphia under the charge of Prof. Angelo Heilprin. The principal districts where collections were made were in north western Yucatan and on the Mexican highlands in the immediate vicinity of the peak of Orizaba. For convenience, I will treat of the two regions separately.

YUCATAN.

The country throughout the north-western part of the peninsula is flat and dry. There are no surface streams whatever, the water being obtained from deep wells. On the western side, fifty miles south from the north coast, is a range of hills running northwest and southeast. The following is a brief description of the most important points where specimens were collected:—

At Progreso, on the north coast, the shore is lined with extensive sand hills covered by a low growth of Palmetto, Cactus and various thorny bushes. These sand hills extend back from the beach for about half a mile and are characterized by such birds as the Cardinal, Cactus Wren, Lawrence's Gnatcatcher and Mocking bird. Farther inland are low mud flats bordering the Mangrove swamps and lagoons which separate the strip of land on which Progreso is situated from the mainland. On the mud flats and along the edge of the mangroves, are found Bryant's Warbler, Myrtle Warbler, Red-wing Blackbird and Vermilion Flycatcher, while about the lagoons various water-birds abound, especially the Louisiana Heron and American Egret.

Farther inland, the country is very stony and covered with a scrubby growth six to ten feet high, composed mainly of various thorny leguminous bushes. At Tekanto, about fifty miles to the southeast, situated in the midst of this scrubby forest, a number of species were collected. The most characteristic birds found here were the Cardinal, Mockingbird, Blue-Gray Gnatcatcher, Parula Warbler, Oriole, Groove-billed Crotophaga, Motmot and Chaparral Cock, while about the haciendas or ranchos were found the Great-tailed Grackle, Ground Doves and Uxmal Woodpecker. Birds were also

collected along the Valladolid road from Tekanto to Tunkas especially near Izamal, Sitalpech and Shkolak. At the first of these localities the forest is about the same as at Tekanto but after passing Sitalpech it becomes much denser and is not so dry, the trees are much larger and are covered with orchids and bromelias. Here we began to encounter birds of a more tropical character such as the Yucatan Blue Jay, Aztec Paroquet, Guatemalan Ivory-billed Woodpecker, Booted Trogon and Euphonia.

The vegetation is densest about half way between Sitalpech and Tunkas where there are two large pools of water or aguadas, at Shkolak and Skashek, which probably communicate with underground water courses. These are surrounded on all sides by a luxuriant forest growth, and birds of all sorts abound. Several species of water birds were seen here, most prominent among which was the Mexican Jacana. Among the smaller birds the Tyrant Flycatchers probably outnumbered all the others together—the Giraud's Flycatcher being the most abundant.

Along the range of hills to the west, collections were made at the hacienda of Calcehtok near the western end of the range and at Ticul, Uxmal and Labna. At Ticul the vegetation was much the same as at Tekanto but on the southern side of the hills in the vicinity of Labna it was denser and more tropical and the character of the birds seen at the two places varied accordingly.

Our visit to Yucatan (Feb. 22nd to March 26th) occurred during the dry season and was probably not the best time for collecting birds, as we were told that a little later there was a migration of birds to the northern part of the peninsula and that the more tropical species were then much more abundant.

The following is a list of all the species observed by us with such notes as we were able to gather in regard to their habits, etc.:

1. *Podilymbus podiceps* (L.)? Pied-billed Grebe.

Several birds supposed to belong to this species were seen swimming in the aguada at Shkolak, but no specimens were obtained.

2. *Larus argentatus smithsonianus* Coues. Herring Gull.

One seen flying about the vessel while at anchor off Progreso, March 22nd.

3. *Larus atricilla* Linn. Laughing Gull.

Common off Progreso, March 22nd.

4. *Anhinga anhinga* Linn. Snake bird.

Several seen on the lagoon back of Progreso; said to be common.

5. *Pelecanus fuscus* Linn. Brown Pelican.

Several of these birds were always to be seen fishing close to the beach at Progreso. They appeared to be very tame, coming close up to the pier where boats were being unloaded.

6. *Fregata aquila* (Linn.). Man-o'-War Bird.

Very common off the coast. Both old and young were seen, though the former appeared the more numerous. Sometimes as many as one hundred could be seen in one flock.

7. *Anas discors* Linn. Blue-winged Teal.

Several were observed on the lagoon back of Progreso, March 19th, and one specimen was shot.

8. *Anser*?

On the night of March 19th great numbers of geese were seen and heard flying overhead, following the coast line in a northeasterly direction. Unfortunately no specimens were procured.

9. *Phoenicopterus ruber* Linn. Flamingo.

Said to be common along the coast but not seen during our stay.

10. *Ardea herodias* Linn. Great Blue Heron.

Found in the swamps back of Progreso.

11. *Ardea egretta* Gmelin. American Egret.

Very common flying about over the lagoons and mangrove swamps along the coast. We secured no specimens.

12. *Ardea caerulea* Linn. Little Blue Heron.

One seen on the aguada at Shkolak.

13. *Ardea tricolor ruficollis* (Gosse). Louisiana Heron.

Very common in the mangrove swamps at Progreso.

14. *Ardea virescens* Linn. Green Heron.

One seen near Progreso.

15. *Gallinula galeata* (Licht.)? Florida Gallinule.

One bird seen swimming on the aguada at Shkolak supposed to be this species.

16. *Aegialitis vocifera* (Linn.). Killdeer.

One shot on the mud flats back of Progreso, March 20th.

17. *Jacana gymnostoma* (Wagl.). Mexican Jacana.

These birds were very common about the aguadas at Shkolak but were exceedingly shy and kept hidden in the dense growth of sedge, only occasionally venturing out on to the large water-lily leaves which cover the surface of the water, in search of food. When roused by a shot they flew across the water uttering a plaintive cry and with their long feet stretched out behind. When on the wing the yellow markings are very prominent.

18. *Colinus nigrogularis* (Gould). Yucatan Bob White.

Common in the forest along the road south of Izamal in flocks of twelve to twenty. Several specimens were shot.

19. *Meleagris ocellata*, Temm. Ocellated Turkey.

Several seen in the woods near Tekanto, Feb. 28th. Unfortunately none were secured.

20. *Columba flavirostris* Wagl.? Red-billed Pigeon.

Several large pigeons were seen near Tunkas which probably belonged to this species.

21. *Melopelia leucoptera* (Linn.). White-winged Dove.

This species was rather common throughout the interior and was generally seen in pairs.

22. *Columbigallina passerina pallescens* (Baird). Mexican Ground Dove.

Very common everywhere about the haciendas and along the roads. Specimens were shot at Tekanto and Ticul.

23. *Columbigallina rufipennis* (Bonap.). Rufous Ground Dove.

Not so common as the preceding. Specimen procured at Tekanto, Feb. 28th.

24. *Cathartes aura* (Linn.). Turkey Vulture.

Occasionally seen at Tekanto and Tunkas, and more frequently between Ticul and Uxmal along the base of the hills. Nowhere common.

25. *Catharista atrata* (Bart.). Black Vulture.

Everywhere abundant and extremely tame. A "nest" containing eggs was found near Tekanto about February 15th.

26. *Geranospizias caerulescens* (Vieill.).

A fine specimen was shot at the aguada at Shkolak.

27. *Rupornis ruficauda* (Sel. & Salv.).

This appeared to be the most common hawk along the road south of Izamal. Several specimens were shot. One, a young male

(Izamal, Mar. 6), has the breast buffy-white longitudinally striped with brown, while the whole upper surface is of a browner hue than in the adult. All the specimens have the ground color of the tail ashy-gray.

28. *Asturina plagiata* (Licht.). Mexican Goshawk.

A fine specimen of this hawk was shot near Tunkas, March 3rd. It has the bands on the tail nearly pure white.

29. *Spiziasstur melanoleucus* (Vieill.).?

A large hawk supposed to be this species was frequently seen in the vicinity of Tekanto and Sitalpech.

30. *Falco sparverius* (Linn.). Sparrow Hawk.

Common on the hills at Calcehtok. A few were also seen at Izamal and at Progreso.

31. *Glaucidium phalænoides* (Dand.). Ferruginous Pigmy Owl.

One seen in the woods near Tunkas, Mar. 3rd. It was in the rufous phase of plumage.

32. *Chrysotis albifrons* (Sparrm.). White-fronted Parrot.

This parrot was first met with in the forest west of Tunkas, only one flock of about half a dozen were seen and one specimen was procured. Several were afterwards seen at Citalpech. They were very noisy.

33. *Conurus aztec* Sonancé. Aztec Paroquet.

The Paroquet was common in the forest between Sitalpech and Tunkas usually associating in large flocks. Whenever one was shot the rest rose on the wing and flew over the trees filling the air with their harsh cries. A few small flocks were seen at Tekanto, Ticul and Labna.

34. *Crotophaga sulcirostris* (Sw.). Groove-billed Ani.

This bird was common everywhere in the interior being most abundant in the open portions of the forest and, unlike the other "Blackbirds" of the country, was seldom seen about the Indian huts, towns, or haciendas. A few were seen in the scrubby growth on the sandhills at Progreso.

35. *Geococcyx affinis* Hartl. Mexican Road-runner.

This bird was only met with in the scrubby woods about Tekanto. It does not seem to be common as only three individuals were seen. Two were shot while running rapidly through the brush, the other

was seen early in the morning perched on top of a small bush ; when alarmed it jumped to the ground and made off through the underbrush. When running through the brush these birds bear a striking resemblance to the Iguanos which abound in the region.

36. *Piaya cayana* (Linn.).

Only seen on the hills near Ticul. This species did not seem to be common and no specimens were procured.

37. *Trogon caligatus* Gould. Booted Trogon.

Only one specimen of this beautiful bird was seen. This was shot in the forest west of Tunkas.

38. *Eumomota supercilialis* (Sw.).

Rather common, seen at Tekanto, Tunkas and Ticul. Frequent about towns and haciendas.

39. *Ceryle alcyon* (Linn.). Belted Kingfisher.

A Kingfisher was seen at the aguada at Shkolak and again at Progreso. It appeared to be identical with our common northern bird but as no specimens were procured the identification remains in doubt.

40. *Campephilus guatemalensis* (Hartl.) Guatemalan Woodpecker.

Two were seen in the deep forest west of Tunkas, March 4th, and others near Labna. One specimen was procured.

41. *Dryobates scalaris parvus* (Cabot). Cabot's Woodpecker.

Rather common through the interior, specimens were procured at Tunkas and Tekanto.

42. *Centurus dubius* (Cabot). Uxmal Woodpecker.

Very common everywhere in the interior. Specimens from Tunkas, Shkolak, Tekanto and Labna.

43. *Nyctidromus albicollis* (Gmel.). Parauque.

Common after dark all along the roads near Tunkas and Shkolak ; also seen at Ticul. One female specimen has the wing bars entirely buff.

44. *Chaetura gaumeri* Lawr. ? Gaumer's Swift.

A swift was quite common at Tunkas and Ticul, which was supposed to be this species but no specimens were procured.

45. *Chlorostilbon caniveti* (Less.). Canivet's Hummingbird.

A male shot near the aguada at Shkolak, March 2nd.

46. *Trochilus colubris* Linn. Ruby-throated Hummingbird.

Common at Shkolak, March 5th, at Labna, March 15th and at Progreso on the sand hills, March 19th.

47. *Lampornis prevosti* (Less.). Prevost's Hummingbird.

A fine male shot on the road from Ticul to Uxmal at the eastern base of the hills, March 13th. Also seen at Labna.

48. *Amazilia cinnamonea* (Less.). Cinnamon Hummingbird.

Rather common, seen at Tekanto, Sitilpech and Ticul.

49. *Amazilia yucatanensis* (Cabot). Cabot's Hummingbird.

A few males shot at Labna, March 14th.

50. *Tyrannus melancholicus* Vieill. Mexican Kingbird.

This is probably the commonest of all the flycatchers found in northern Yucatan. It was seen throughout the interior especially about the haciendas. In the scrubby growth on the sandhills at Progreso we found a *Tyrannus* which at first sight seemed different but is probably identical with this species. It seemed to differ considerably in its habits from the bird of the interior, being much more quiet. Only one specimen was collected in the interior and it is hardly right to take this as typical of all the inland birds, but comparing the three Progreso specimens with this, I find them much lighter yellow beneath, with a wider and more prominent grayish-olive band across the breast. The back is nearly uniform gray while it is very strongly tinged with olive in the inland bird. The crest of the coast bird contains much less red than the inland specimen and the under tail coverts are spotted with brown.

51. *Pitangus derbianus* (Kaup). Derby Flycatcher.

One specimen shot at Tunkas, March 3rd. No others seen.

52. *Megarhynchus pitangua* (Linn.).

Specimens procured in the forest near Shkolak and also near Tekanto.

53. *Myiozetetes texensis* (Giraud). Giraud's Flycatcher.

Very common throughout the interior, especially about the haciendas and at the aguadas at Shkolak. These birds have a shrill cry and keep up a continuous noise.

54. *Oncostoma cinereigulare* Sel.

Apparently rare; only one specimen was seen which was shot near Tekanto, February 26th.

55. *Myiarchus yucatanensis* Lawr. Yucatan Crested Flycatcher.

Quite common about the haciendas. Two specimens were shot near Tekanto.

56. *Contopus albicollis* Lawr. White-throated Wood Pewee.

Specimens were shot near Tekanto and also near Shkolak.

57. *Empidonax minimus* Baird. Least Flycatcher.

Seen at Ticul, Tunkas and Tekanto. Rather common.

58. *Pyrocephalus rubineus mexicanus* (Scl.). Vermilion Flycatcher.

This bird was common on the mud flats bordering the mangrove swamps at Progreso and seems to be restricted to the coast region as none were seen inland. The specimens collected are of a more rosy red than those from Orizaba, Mexico.

59. *Cissolopha yuca ta* (DuBois). Yucatan Blue Jay.

The Jay is common throughout the interior but seems to be more abundant in the dense forest surrounding the aguadas at Shkolak, where large flocks were frequently seen.

60. *Xanthoura luxuosa cyanocapilla* (Cab.). Yellow-bellied Green Jay.

Seen at Tekanto, Izamal and Ticul, always close to the towns.

61. *Calliothrus robustus* (Cab.). Red-eyed Cowbird.

Abundant in the cow yards of the haciendas, continually flying about the cattle, in company with *Dives*.

62. *Agelaius phoeniceus* (Wagl.). Red-winged Blackbird.

Several pairs seen on the edge of the Mangrove swamps at Progreso, March 20.

63. *Icterus auratus* Bp.

One male shot and several others seen near Tekanto, always in company with the following.

64. *Icterus gularis* Wagl.

This bird was abundant throughout the interior and, with the exception of the one above mentioned, all the orioles shot belonged to this species. It is strange that this species which we found so common is not mentioned in Mr. Boucard's list of the birds collected in Yucatan by Dr. Gaumer, and that the species described by him as abundant were not seen at all by us.

Perhaps the breeding districts of the various species are different and one species may predominate in Northern Yucatan at one time and be succeeded by another. We saw no females of this species

though from their difference in coloration they ought to have been easily recognized if they were present.

65. *Icterus cucullatus igneus* Rdgw.? Fiery Oriole.

A smaller oriole observed at Progreso was probably this species though as no specimens were procured I can not be certain. Both males and females were seen here but the species was not observed elsewhere.

66. *Dives dives* (Bonap.).

Abundant throughout the interior but always found about the towns or haciendas. Not seen at Progreso.

67. *Quiscalus macrourus* Sw. Great tailed Grackle.

Common in all the towns and about the haciendas but never found far away from them.

68. *Embernagra rufivirgata verticalis* Rdgw. Striped-crowned Sparrow.

Tolerably common about Tekanto, but very hard to shoot as it keeps continually concealed in the thickest bushes. Its note resembles that of the Field Sparrow (*Spizella pusilla*) but is louder. It was also met with on the hills near Ticul.

69. *Cardinalis cardinalis yucatanicus* Rdgw. Yucatan Cardinal.

Everywhere common in the dry scrubby growth about Tekanto, and Ticul also on the sand hills at Progreso, but not found where the vegetation is denser, as at the aguadas. At Ticul it occurred abundantly on both slopes of the mountains.

70. *Habia ludoviciana* (Linn.). Rose-breasted Grosbeak.

Single birds seen at Tekanto and Tunkas.

71. *Guiraca caerulea* (Linn.). Blue Grosbeak.

A few seen about haciendas at Tekanto and Tunkas.

72. *Passerina parellina* Bp. Blue Bunting.

One bird supposed to belong to this species was seen near Sitalpech but was not secured.

73. *Passerina ciris* (Linn.). Painted Bunting.

A number of cage birds seen which were said to have been taken in the vicinity of Merida; none were observed, however, by any of our party. They probably occur later in the season.

74. *Saltator grandis* Lafr.

One specimen was shot at Tunkas and others were seen at Sitalpech and Ticul.

75. *Euphonia affinis* (Less.).

Two were seen between Tunkas and Shkolak, one of which was shot.

76. *Progne chalybea* Gmel. Gray-breasted Martin.

A flock of these birds were seen flying over the aguada at Shkolak, March 5th, and one specimen was secured.

77. *Petrochelidon fulva* (Vieill.)? Cuban Cliff Swallow.

Large flocks of cliff swallows were seen about the cave on the hills near Calcehtok, but none were shot, so the identification is in doubt.

78. *Tachycineta albilinea* Lawr. White-rumped Swallow.

Very common at Progreso especially about the lagoons and mangrove swamps.

79. *Stelgidopteryx serripennis* (Aud.). Rough-winged Swallow.

Common about the hills at Calcehtok.

80. *Cyclorhis flaviventris* Lafr.

Not common; one was shot at Tekanto, March 9th, and another at Calcehtok, March 11th.

81. *Vireo noveboracensis* (Gm.). White-eyed Vireo.

One shot at Tekanto, February 28th. Very common on the mountains near Ticul, March 17th, in company with *Dendroica virens*, *Geothlypis trichas* and *Compsothlypis americana*.

82. *Compsothlypis americana* (Linn.). Parula Warbler.

Common throughout, especially about Tekanto and at Ticul, March 17th.

83. *Dendroica bryanti* Rdgw. Bryant's Warbler.

Very common among the mangroves at Progreso, March 19th and 20th. Song very much like that of *D. aestiva*. The female specimens were in very worn plumage.

84. *Dendroica coronata* (Linn.). Myrtle Warbler.

Common among the Mangroves, March 20th, in company with the preceding.

85. *Dendroica dominica albilora* Baird. Sycamore Warbler.

Several seen at Tunkas and quite common at Ticul on the Palmetto trees.

86. *Dendroica virens* (Gm.). Black-throated Green Warbler.

One shot near Shkolak, March 5th; very common on the mountains near Ticul, March 17th.

87. *Dendroica palmarum* (Gm.). Palm Warbler.

One shot among the mangroves at Progreso, March 19th.

88. *Seiurus noveboracensis* (Gm.). Water Thrush.

Common among the mangroves at Progreso.

89. *Geothlypis trichas* (Linn.). Maryland Yellow-throat.

Tolerably common at Merida and Tekanto and abundant on the mountains at Ticul, March 17th.

90. *Setophaga ruticilla* (Linn.). Red-start.

Several males seen near Tekanto, March 7th.

91. *Mimus gracilis* Cab. Yucatan Mockingbird.

Common throughout though most abundant in dry scrubby localities. Observed at Progreso and all over the mountains near Ticul. The four specimens collected vary somewhat in the amount of white on the tail and in the color of the back.

92. *Campylorhynchus guttatus* (Gould). Yucatan Cactus Wren.

Common in the scrubby growth which covers the sand hills at Progreso. A nest was found nearly completed March 19th.

These birds keep well covered in the bushes and are very hard to shoot.

93. *Troglodytes brachyurus* Lawr.

Tolerably common about Tekanto and other places where the vegetation is low and scrubby.

94. *Poliophtila caerulea* (Linn.). Blue-Gray Gnatcatcher.

Common throughout the interior but most abundant in the drier and more open districts.

95. *Poliophtila albiventris* Lawr. Lawrence's Gnatcatcher.

One male shot at Progreso, March 19th. Not seen elsewhere.

96. *Merula grayi* Bonap. Gray's Thrush.

One shot near Labna, March 15th, and several others seen at Ticul.

MEXICO.

At the town of Orizaba a few specimens were collected but we had not time to procure anything like a full series of the avifauna of the region. The town lies in a narrow winding valley at an altitude of about 4,000 feet and is surrounded on all sides by hills and mountains; the vegetation is very luxuriant and the Rio Blanco, a mountain stream, runs through the valley. The following species were observed during our stay in the town:

1. *Columbigallina passerina pallescoens* (Baird). Mexican Ground Dove.
Common.
2. *Cathartes aura* (Linn.). Turkey Vulture.
Common, almost entirely replacing the Black Vulture which
abounds in the lower country, especially at Vera Cruz.
3. *Catharista atrata* (Bart.). Black Vulture.
Only a few seen.
4. *Falco sparverius* Linn. Sparrow Hawk.
Common.
5. *Ceryle cabanisi* (Tschudi). Texan Kingfisher.
Several seen along the stream.
6. *Empidonax bairdii* Sel. Baird's Flycatcher.
Two shot, March 31st.
7. *Pyrocephalus rubineus mexicanus* (Sel.). Vermilion Flycatcher.
Common.
8. *Collothrus robustus* (Cab.). Red-eyed Cowbird.
Common about the haciendas.
9. *Quiscalus macrourus* Swains. Great-tailed Grackle.
Very common.
10. *Aimophila rufescens* Swains.
Several seen in low thickets bordering swamps, one was shot.
11. *Melospiza lincolni* (Aud.). Lincoln's Sparrow.
Very common, in company with the following.
12. *Ammodramus sandwichensis alaudinus* (Bon.). Western Savanna Sparrow.
Common.
13. *Sporophila morelleti* (Bonap.). Morellet's Seed-eater.
Common in flocks.
14. *Piranga hepatica* Swains.? Hepatic Tanager.
One bird seen supposed to belong to this species.
15. *Stelgidopteryx serripennis* (Aud.). Rough-winged Swallow.
Common.
16. *Dendroica coronata* (Linn.). Myrtle Warbler.

I think this is about the limit of this bird's distribution inland, as higher up the mountains and farther west we found it replaced by *D. auduboni* (Towns.). One specimen was shot March 31st, several others seen at the same time.

17. *Cinclus mexicanus* Sw. American Dipper.

Seen along the Rio Blanco. No specimens secured.

18. *Troglodytes ædon aztecus* Baird. Western House Wren.

Rather common.

At the town of Chalchicomula or San Andres a number of specimens were collected and a good idea of the avifauna of the region was obtained.

Chalchicomula is situated on a level plain covered with loose sand or volcanic ash and is surrounded by numerous small cones of volcanic origin while the great peak of Orizaba lies in full view a few miles to the east. The plain is exceedingly dry and the vegetation is restricted to a few scattered bushes and scrubby trees, while on the peak of Orizaba are the regular mountain forests of pine and spruce. The altitude of the town is about 8,200 while the peak towers up some 10,000 feet above the plain, reaching a height of over 18,000 ft. above the sea level.

The difference between the birds of this vicinity and of the town of Orizaba, 4,000 ft. below, was at once apparent. Only three species were seen at both places, the Turkey Vulture, Lincoln's Sparrow and Sparrow Hawk, and only the last of these was at all abundant at Chalchicomula. Nearly all the species seen belonged to more northern genera, and the absence of such birds as the Great-tailed Grackle, Black Vulture and Red-eyed Cowbird was especially noticeable.

In the town itself the only birds observed were the House Finch, Barn Swallow and Blue Grosbeak, while in the sandy country stretching toward the mountain the most characteristic species were Baird's Wren, Black-eared Bush Tit, Curve-billed Thrasher, Western Chipping Sparrow, and the two species of Towhee. On the edge of the pine forest of the mountain a fine finch, *Aimophila superciliosa*, was abundant. In the forest were found the Robin, Western Blue bird, Slender-billed Nuthatch, Mexican Creeper, Mexican Chickadee, Audubon's Warbler, Mexican Snow bird, Sieber's and Sumichrast's Jays. The spruce belt of the mountain was not well defined and did not seem to offer any peculiarities in its avifauna.

While several of the mountain species, such as Sumichrast's Jay and the Mexican Snow-bird, were found on the plain some distance from the edge of the forest, none of the characteristic birds of the open country were met with in the wooded districts.

The following is a list of the species seen in the vicinity of Chalchicomula and on the Orizaba mountain, together with notes on the species found on the peaks of Popocatepetl, Ixtaccihuatl and Toluca, the latter furnished by my associate, Mr. Frank C. Baker.

1. *Cathartes aura* (Linn.). Turkey Vulture.

A few seen; also found about Toluca, Popocatepetl and Ixtaccihuatl, usually to an altitude of 8,000–10,000 ft., though on the last two mountains Mr. Baker says they were observed all the way up to the summit.

2. *Falco sparverius* (Linn.). Sparrow Hawk.

Seen about Chalchicomula and up to the summit of Orizaba, also at the summit of Popocatepetl and up to 10,000 ft. on Ixtaccihuatl.

3. *Dryobates stricklandi* (Mall.). Strickland's Woodpecker.

One shot near the base of Orizaba at 8,700 ft., April 4th.

4. *Colaptes cafer* (Gmel.). Red-shafted Flicker.

A flock of about a dozen seen at the base of Orizaba, April 4th. Also at 11000–12000 ft. on Ixtaccihuatl and Popocatepetl.

5. *Trochilus platycercus* Sw. Broad-tailed Hummingbird.

Several were observed in the vicinity of Chalchicomula; one female specimen was secured.

6. *Milvulus forficatus* (Gm.). Scissor-tailed Flycatcher.

One of these birds was seen near Chalchicomula but was not secured.

7. *Aphelocoma sumichrasti* (Ridgw.). Sumichrast's Jay.

Very common in the lower part of the pine forest of Orizaba up to 900–1000 ft., also found on Popocatepetl and Ixtaccihuatl up to about 11,000 ft.

8. *Aphelocoma sieberii* (Wagl.). Sieber's Jay.

One specimen shot on Orizaba Mt. at 10,000 ft.

9. *Corvus corax sinuatus* (Wagl.). Mexican Raven.

Several observed near Chalchicomula and on the mountain to the extreme summit, where two were observed flying over the snow fields. They also occurred up to the tops of the other mountains.

10. *Icterus spurius* (Linn.). Orchard Oriole.

A male and female observed near Chalchicomula were very small. The female which was shot measures (skin) 5.50 in. in length, wing 2.70 in., tail 2.62 in.

11. *Loxia curvirostra stricklandi* (Rdgw.). Mexican Crossbill.

One male shot at the lower edge of the pine forest, at about 9,000 ft., April 4th.

12. *Carpodacus mexicanus* (Müll.). Mexican House Finch.

Very common about the houses in the town and along the roadsides nearly to the base of the mountain.

13. *Aimophila superciliosa* Sw.

This bird was abundant just below the pines at the base of the mountains and was very easy to shoot as it remained perfectly still, perched on the top of a bush intent only on its song. Sumichrast's statement (see *Biologia Cent. Am.*, Aves I, p. 396) that this species replaces *A. rufescens* in the higher altitudes is undoubtedly correct; the latter species was found at the town of Orizaba 4,000 ft. below.

14. *Spizella socialis arizonae* (Coes). Western Chipping Sparrow.

Very common throughout the open sandy country nearly to the edge of the pines.

15. *Junco cinereus* (Sw.). Mexican Snowbird.

Very common through the pine forest to 11,000 ft. It was also found some distance below the pines on the plain. Seen on Popocatepetl at 11,000 ft. and on Toluca at 8,000 ft.

16. *Melospiza lincolni* (Aud.). Lincoln's Sparrow.

One shot near Chalchicomula, April 5th.

17. *Pipilo fuscus* Swains. Brown Towhee.

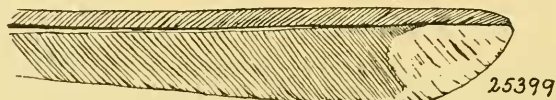
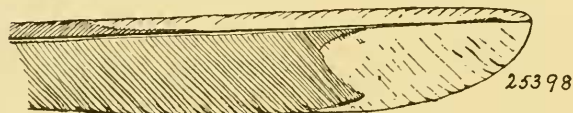
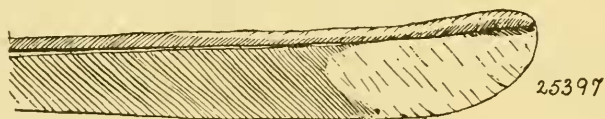
Common about Chalchicomula nearly to the base of Orizaba.

18. *Pipilo maculatus* Sw. Mexican Towhee.

Common, associating with the last. Three males were collected which differ somewhat from one another but are all referred to this species by Mr. Ridgway who kindly examined them. All have a more or less prominent white spot on the throat. In No. 25,399, which is the brightest colored individual, the white streaks above are restricted entirely to the sides of the back, and are faintly tinged with yellow, as is also the case with the spots on the wing coverts, some of the latter being also narrowly edged with black. This specimen has a distinct white line from the bill to the eye. No. 25,397 has the white streaks on the back strongly suffused with rufous and some of the black feathers of the breast edged with the same.

The amount of white on the tail feathers seems to vary considerably as can be seen from the accompanying cut, which represents an

external tail feather from each of the specimens. No. 25,397 in addition to the spot of white on the inner web of the third tail feather has a small spot on the outer web also, while No. 25,399 has no spot at all on the outer web and only a small one at the extremity of the inner web.



19. *Guiraca caerulea eurhyncha* Coes. Western Blue Grosbeak.

Several flocks observed in the town.

20. *Tachycineta albilinea* Lawr. ? White-rumped Swallow.

A species of swallow was very common in the deep crevices or ravines near the town. It seemed to belong to this species though as no specimens were obtained the identification must remain in doubt.

21. *Lanius ludovicianus excubitorides* (Sw.). White-rumped Shrike.

Rather common about clumps of bushes on the sandy country between the town and the mountain.

22. *Helminthophila celata* (Say). Orange-crowned Warbler.

One shot on the lower edge of the pine forest, April 4th.

23. *Dendroica auduboni* (Townsend). Audubon's Warbler.

Common in the pine forest of Orizaba at an elevation of 10,000–12,000 ft.; also on Popocatepetl and Ixtaccihuatl at about the same altitude.

24. *Harporhynchus curvirostris* (Sw.). Curve-billed Thrasher.

Common throughout the open sandy country; especially about the Indian huts and along the roadside.

25. *Thryothorus bewickii bairdi* Salv. & Godm. Baird's Wren.

Common all over the plain, but not found in the town or on the mountain.

26. *Troglodytes brunneicollis* Sel. Tawny-throated Wren.

In the pine forest of Orizaba at 10,000–13,000 ft.; also found on Popocatepetl at 10,000 ft.

27. *Certhia familiaris mexicana* (Glog.). Mexican Creeper.

In the pine forest of Orizaba from the lower border to an altitude of 11,000 ft. It also occurred on all the other mountains.

28. *Sitta carolinensis aculeata* (Cass.). Slender-billed Nuthatch.

From the lower edge of the forest to 10,000 ft. above. Seen also on Ixtaccihuatl at 10,000 ft. elevation.

29. *Parus meridionalis* Sel. Mexican Chickadee.

Common in the pine and spruce forests from about 11,000 ft. to the limit of tree growth.

30. *Psaltiriparus melanotis* (Harlt.). Black-eared Bush-Tit.

Common on the sandy plain between Chalchicomula and the Peak of Orizaba.

31. *Regulus calendula* (Linn.). Ruby-crowned Kinglet.

Rather common on the lower edge of the pine forest. Seen also on Ixtaccihuatl at 9,000 ft. elevation.

32. *Merula migratoria* (Linn.). Robin.

This species occurred in the pines of Orizaba at 9,000 ft., and on all the other mountains at an altitude of 9,000–11,000 ft.

33. *Sialia mexicana* Sw. Western Bluebird.

Common on Orizaba from the lower edge of the forest to about 11,000 ft. Also seen on Popocatepetl and Toluca at about the same altitude.

In addition to the collections above described Mr. Baker procured a few other specimens at several localities in the western part of Mexico.

At Lake Pátzcuaro on May 1st he collected:—

Aythya collaris (Donov.). Ring-necked Duck.

Plegades guarauna (Linn.). White-faced Glossy Ibis.

Botaurus exilis (Gmel.). Least Bittern.

Fulica americana (Gmel.). American Coot.

Tyrannus vociferans Sw. Cassin's Kingbird.

Sayornis nigricans (Sw.). Black Phoebe.

Agelaius gubernator (Wagl.). Bicolored Blackbird.

Carpodacus mexicanus frontalis (Say). House Finch.

Ammodramus sandwichensis alaudinus (Bp.). Western Savanna Sparrow.

About fifteen miles south of Pátzcuaro he collected a male and female of that interesting bird, *Chamaeospiza torquata* (DuBus). The resemblance of this bird to the tanager, *Buarremon brunneinucha* (Lafr.), has frequently been remarked, and it was actually described as a *Buarremon* by Mr. Lawrence (An. Lyc. N. Y. viii, 126). The structure of the feet and bill, however, bring it very close to *Pipilo* and its nearest relative seems to be *P. chlorurus*. Salvin and Godman in the *Biologia Cent. Americ.* seem inclined to transfer *Chamaeospiza* to the Tanagridae while they place *Pipilo chlorurus* in the genus *Embernagra*.

As regards the habits of *Chamaeospiza* Mr. Baker says they resembled those of *Pipilo*.

At La Playa, near the base of the volcano of Jorullo, May 3rd the following species were collected :

Centurus elegans (Sw.). Elegant Woodpecker.

Cassidix melanicterus (Bp.). Crested Cassie.

Chondestes grammacus strigatus (Sw.). Western Lark Sparrow.